

## Category 1 (Foundational/Regional) Project Final Report

### Report Completion Date:

#### Section 1: Project Information

Project Information	
Control #:	1.4.25
Project Title:	Distribution System Decision Support Tools
Project PI Name and Lab Affiliation: Project Co-PI (plus-one) and Lab Affiliation:	Michael Ingram (NREL), 303-275-3231, Michael.Ingram@nrel.gov Lisa Schwartz (LBNL), 510-926-1091, LCSchwartz@lbl.gov
DOE Project Manager(s):	Joseph Paladino, 202-586-6916, Joseph.Paladino@hq.doe.gov Elaine Ulrich, 202-287-5676, elaine.ulrich@ee.doe.gov
Period of Performance:	12/31/19
Date Closed:	02/28/2020

#### Section 2: Project Assessment and Checklist

Project Assessment and Checklist	Y/N	Confirmation Date	Comments
Have all quarterly reports been submitted?	Y		
Have all milestones have been delivered?	Y		
Are all products finalized (e.g. technical reports, journal articles)?	Y		
Have all project products been finalized and presented/submitted to DOE Project Manager(s) and/or GMI Leadership?	Y		
Have all potential sensitivities been identified and addressed with DOE Project Managers and/or GMI Leadership?	Y		
Has the project team received feedback from Project Stakeholders (e.g. advisory group)?	Y		Each regional workshop gathered feedback from attendees
Are there any open or pending costs?	N		

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#### Section 3: Outcomes, Deliverables, Publications

Provide the following:

*\*In addition to titles, provide links to any websites or other repositories where deliverables and/or other information will be available after the project has been completed*

*\*Publications available for public release, URLs, etc. listed here should be uploaded to GMLC Open Point*

##### 1. List of Outcomes:

- a. Conducted four regional trainings on distribution systems and planning for public utility commissions (PUCs), including two trainings with state energy offices, co-hosted by NARUC, NASEO and regional partners, with participation from 34 states plus District of Columbia and Puerto Rico. The trainings broadly shared results of several GMLC projects — e.g., Metrics, Grid Architecture, Valuation, Data Analytics, and Future Electric Utility Regulation — and DOE’s Modern Distribution Grid (DSPx) initiative. Also provided educational webinars and in-person trainings for members of the National Association of State Utility Consumer Advocates. Agendas and copies of the presentations are linked below.
  - i. NECPUC Distribution Systems & Planning Training, 2017.  
<https://emp.lbl.gov/publications/necpuc-distribution-systems-planning>
  - ii. Midwest Distribution Systems & Planning Training, 2018.  
<https://emp.lbl.gov/node/2818>
  - iii. Distribution Systems and Planning Training for Western States, 2018.  
<https://emp.lbl.gov/publications/distribution-systems-and-planning>
  - iv. Mid-Atlantic Distribution Systems and Planning Training, 2019.  
<https://emp.lbl.gov/publications/mid-atlantic-distribution-systems-and>

##### 2. List of Deliverables:

- a. Conduct workshop/training courses targeted at state utility regulators on distribution system planning and emerging issues (MS 3.3)
- b. Assess gaps and develop requirements for electric distribution system planning tools. Technical report that summarizes progress, identifies remaining gaps and development requirements, and describes lessons learned on distribution system planning system support tools. (MS 5.1/5.2)
- c. Memo outlining the education and training needs of state utility regulators on emerging electric distribution planning practices, methods and tools. (MS 3.1/3.2)

##### 3. List of Publications:

- a. *Citation:* Tang Y., J.S. Homer, T.E. McDermott, M. Coddington, B. Sigrin, and B. Mather. 2017. *Summary of Electric Distribution System Analyses with a focus on DERs*. PNNL-26272. Richland, WA: Pacific Northwest National Laboratory.  
[https://gmlc.doe.gov/sites/default/files/resources/1.4.25\\_Summary\\_of%20electric\\_distribution\\_system\\_analyses\\_April%2010%20FINAL.pdf](https://gmlc.doe.gov/sites/default/files/resources/1.4.25_Summary_of%20electric_distribution_system_analyses_April%2010%20FINAL.pdf)

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- b. *Citation:* Homer J.S., A. Cooke, L. Schwartz, G. Leventis, F Flores-Espino, M. Coddington. 2017. *State Engagement in Electric Distribution System Planning* State Engagement in Electric Distribution System Planning. PNNL-27066. Richland, WA: Pacific Northwest National Laboratory.  
[https://gmlc.doe.gov/sites/default/files/resources/state\\_engagement\\_in\\_ds\\_p\\_final\\_rev2.pdf](https://gmlc.doe.gov/sites/default/files/resources/state_engagement_in_ds_p_final_rev2.pdf)

#### 4. List of Awards or Recognition:

- a. Lisa Schwartz received the 2018 *Mary Kilmarx Award* from the National Association of Regulatory Utility Commissioners (NARUC). Of Lisa’s service, NARUC wrote: “Lisa Schwartz has been a dedicated and tireless champion, supporter, expert, and trail blazer for positive regulatory innovation across the states.”

#### 5. List any ROIs – Software, Intellectual Property, Licensing, Patents, Etc.

- a. N/A

### Section 4: Final Costing

Each Lab Financial POC Completes Final Costing of GMLC Projects for their lab. PIs, Lab Leads will need to assist but not required to report financials with this final report.

### Section 5: Final Thoughts/Comments

Final Thoughts	Comments
Lessons Learned	
Opportunities for Improvement	
Future Projects: Ideas for future work? Possible next steps and research direction?	<b>GMLC 4.2.4 carries on the important work of providing technical workshops for states</b>
Other:	